

The present invention provides a clear transparent shade material, substantially haze free, that meets the improved German fire retardancy Test Standard 4102:B2.

The assignee of the present application is also the assignee/Applicant of the Valinski application and can provide evidence that the material taught in Valinsky does not meet the tighter fire standard DIN 4102:B2. Samples made in accordance with Valinski passed the firestandard DIN 4102:B3 but were unable to pass the more stringent B2 standard. The applicant can provide documentation to show this. Material which meets the B3 standard test is not commercially viable in Europe and for this reason the Valinski patent application was not pursued. The present material which meets the B2 standard is commercially successful meeting stringent European fire regulations.

The positioning of the UV absorbing PET in the present invention prevents the FR materials used in the composite from yellowing or bronzing on aging. Valinski does teach that the PET layer may contain UV absorber (UVA) but does NOT teach that the PET containing the UVA must be outside the FR containing layer. Valinski is silent on the relative positioning of the FR coating and the PET layer with UVA. Indeed, Valinski teaches away from the present invention. In all the examples the FR Coating 2 is external to the PET layer 1 see particularly Figs.4-Fig 6 and the statements on Page 11 lines 19-21 and page 12 lines 1-3.

The Examiner contends that Levchik teaches that resorcinol bis(diphenyl phosphate) (RDP) may be added to polyester compositions to improve fire retardency and therefore it is obvious to add RDP the PET layer in Valinssky.

Applicant would observe that Levchik teaches that RDP is suitable for use in some polyester compositions in the presence of a high charring polymer which makes it possible for the phosphorous containing additive to dissolve in the polyester (see Col 2 lines 25-35). Examples of high charring polymers are given in Col 3 lines 17-27 and thermoplastic polyesters such as PBT and PET are specifically excluded. Furthermore

the only sample of fire retardant polyesters given in the Examples contain PBT not PET. There are no fire retardant samples comprising PET and RDP.

Also it should be noted that RDP in the present specification is added to the polyurethane based adhesive.

It is therefore submitted that the use of a PET containing a fire retardant is not obvious over Valinski. Valinski teaches the use of an adhesive containing FR as in the present invention and then teaches that additional FR can be added to the composite by use of a FR containing coating. Valinski does not teach that improved FR properties can be obtained by using PET with added fire retardant.

Inanuma does not teach a Sun shade containing FR materials. The problems associated with the incorporation of FR materials into transparent shade composites are totally ignored.

Since the film used in Inanuma is PET, then for the reasons discussed above, Levchik teaches away from the present invention since Levchik teaches that RDP cannot be used in PET without the presence of a high charring polymer.

The applicant can demonstrate that the incorporation of FR materials into adhesives of the type disclosed in Pengilly gives rise to high levels of haze which is unacceptable in transparent composites.

Pengilly at Col 2 line 65- Col 3 line 5 acknowledges the problems associated with the use of FR in an adhesive and states that the adhesive can be somewhat hazy due to the presence of FR. However the haze problem is then totally ignored. Pengilly discloses an adhesive containing FR which can be used to coat PET film and other flammable substrates to act as a fire retardant for itself and the PET film/adhesive composite. However the composites disclosed in Col 3 line 40 to Col 4 line 15 are not transparent but are opaque due to the aluminium foil.

Any person having the teachings of Inanuma, that is a transparent sunshade, would only use the adhesive of Pengilly if the Haze properties of the composite were not critical.

The applicant is the first to arrive at a shade material which is clear, transparent, has little haze, meets the fire retardant standard to DIN 4102:B, and overcomes the problems associated with exposure of the FR film composite to UV. This problem with FR containing composites is not disclosed in any of the cited art.

The applicant accepts that the use of UV absorbers with PET is known. However, the present invention relates to a composite film in which the PET layer containing the UV absorber is used in specified layers in the composite in relation to the FR containing layers.

Levchik teaches the use of resorcinol bis (diphenylphosphate) as a FR material (amongst many others) which is added to a PBT formulation containing high charring polymer. It does not teach the addition of FR to the adhesive and nor does it solve the problems of haze in the adhesive layer.

The applicant has invented a film composite which meets the most stringent FR requirements, is transparent, and has good resistance to deterioration due to rapid breakdown of the FR material. This specific combination of features is not shown in the prior art.

With regard to the Examiners comments on Claim 17 & 20, the present invention is the first disclosure of a sun shade having sound deadening characteristics. Once the present invention has been conceived, then in hindsight it might be obvious to use the teachings of Fuchs and Jablonka. However, the invention is the realisation that a shade can also be used for sound deadening. Fuchs and Jablonka are silent on FR Properties just as Valinski, Pengilly and Levchik are silent on sound deadening. The applicant realises that a FR film composite can be used for the manufacture of sound deadening shades in novel and not obvious.

None of the cited art, either singly or in combination, discloses the invention as now claimed in Claims 1, 11, & 19.

For the reasons given above, it is believed that the claims as presently amended should now be allowable and such action is respectfully requested.

If the examiner feels that are still a few minor matters to be resolved before issuing a notice of allowance, Applicants' attorney would welcome a phone call from the Examiner at the below listed phone number.

Respectfully submitted,


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I hereby certify that this correspondence is being facsimile transmitted to the US Patent and Trademark Office (Fax No. (571) 273-8300) on May 2, 2006.

Paul E Milliken

Signature

